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ABSTRACT

A Vocational-Technical Education Consortium of States (V-TECS) curriculum was developed for a new job title, the "multiskilled health technician." A traditional task analysis method was not feasible, since the occupation does not exist. Instead, the project defined the occupation and developed the duties and tasks as a hybrid of many occupations. A literature review identified specific health occupations that did not require licensure for employment. Twenty-nine occupations were defined as entry level, attainable with a high school education and on-the-job training, as opposed to formal postsecondary education. The occupational groups were divided into health services workers and health technicians. A general list of duties and tasks performed by each occupation was created and consolidated with a list generated by a panel of health professionals. The sample consisted of incumbent workers selected by contacts in various health settings and by hospitals, pharmacies, clinics, doctors' offices, and nurses who were hand-delivered surveys. Of 350 surveys, 67 were returned. Most multiskilled technicians worked in a nontraditional setting, usually not hospitals; most had only high school diplomas; and most had worked in the health care field for less than 10 years. From the survey results, a list of the top 18 skills needed by the multiskilled health technician was compiled and grouped in three categories: work ethic, health-related skills, and communication skills. (YLB)

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Multiskilled Health Technician: Developing a V-TECS Curriculum Guide

Final Report

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Multiskilled Health Technician:
Developing a V-TECS Curriculum Guide

Introduction

A grant was given to the Workforce Education and Development program at Penn State University for the development of a V-TECS curriculum for a new job title, the "multiskilled health technician." Identifying the duties and tasks for this project could not be done in the traditional task analysis method as the occupation does not now exist. Instead, our charge was to define the occupation and develop the duties and tasks as a hybrid of many occupations. What follows is a summary report of our findings.

The Need for a Curriculum for the Multiskilled Health Technician

Students interested in pursuing a career as a health technician will need to be prepared to enter an increasingly more complex career field. Because the number and nature of the health care technician occupations are changing rapidly, students will need a wide variety of entry-level skills that can be applied to many occupations. The technician has a shorter, less in-depth training and is usually supervised by another professional. However, the technician level of employment is frequently the entry level to a career ladder, possibly even leading to the highly skilled professional positions in the medical field.

At the present time, most health occupations programs in Pennsylvania's schools are targeted for specific job classifications. While some of these more specific programs are still viable, (i.e. Dental Assistant, Nurse Aide, etc.) some students could benefit from a broader preparation in the health technician field. This would encourage more students to explore the wide array of opportunities in the health care field. According to the National Center for Research in Vocational Education (Hudis et al, 1992), "Expanding and developing new secondary-level health occupation preparation, especially allied health sciences courses, should increase the pool of employees simply by increasing the supply of high school graduates who are motivated to pursue health careers" (p. 3).

Employment opportunities in the health technician field for today's students are directly affected by population and employment trends, increasing technology, and the changing nature of the workplace. Educators are continuously challenged to provide relevant, meaningful experiences that will help their students be competitive in the job market of tomorrow. Students today must be prepared to learn on the job, using new technology in careers which may not even exist at the time they are preparing for employment. Therefore, educators must design curriculum that provides skills that could be applied to a broader range of occupations and lead to further training for specialized occupations as needed.

The development of a V-TECS document in the area of multiskilled health technician will aid in the preparation and training of these much needed employees in the health care industry by providing teachers with competency-based content and resources needed to deliver instruction in this area.

Population and Employment Trends

Employment opportunities in the health care field are affected by population trends in several ways. Changes in the size and composition of the population between 1992 and 2005 will influence the demand for goods and services. According to the Bureau of Labor Statistics (U.S. Department of Labor, 1995) the U.S. population aged 85 and over will grow about four times as fast as the total population, increasing the demand for health services. For example, an aging population, advances in medical technology, and the shift from inpatient hospital care to outpatient care are projected to create rapid employment growth in health care and related services.

Pennsylvania's population is not predicted to grow as fast as some other areas of the U.S. However, employment opportunities in the health care field are still projected to grow rapidly. Between 1992 and 2005 employment of Pennsylvania's health care and service workers is projected to grow by 36.9 percent, over twice the rate of growth of the civilian nonfarm workforce. While this will include increased employment in the

professions, such as physicians and physical therapists, work in personal care facilities and home health care are predicted to be rapid growth fields.

Increasing Technology and Changing Nature of the Workplace

While the number of jobs is increasing in the health care field, the nature of those jobs is also changing dramatically. The 1977 edition of the Dictionary of Occupational Titles (D.O.T.) shows 152 occupations in Medicine and Health. Of those, eight were "technicians" and eleven were "technologists." In the more recent edition of the D.O.T. (1991) 186 occupations are listed, with 19 "technicians" and 22 "technologists." Not only have additional titles been added, but the nature of some of the occupations have also changed. For example, when comparing the 1977 description of the Medical Record Technician (079.367-014) with the one listed in the 1991 edition, we can see the 1977 worker is to, "*compile medical care and census data for statistical reports. Transcribes medical reports. Maintains indexes on patient, disease, operation, and other categories,*" while the 1991 worker is to, "*compile medical care and census data for statistical reports on types of diseases treated, surgery performed, and use of hospital beds, in response to inquiries from law firms, insurance, insurance companies, and government agencies. Maintains and utilizes a variety of health record indexes and storage and retrieval systems. Operates computer to process, store, and retrieve health information.*"

Obviously, a medical record technician will now require new skills of working with computers, communicating with lawyers and insurance agents, and interacting with many other health professionals. The public demand for privacy with new issues such as HIV and other infectious diseases creates a need for these technicians to have a clear understanding of the law and their responsibilities within it.

Laboratory procedures have also been greatly influenced by new technology, so health technicians must have some understanding of the basics of safety procedures, quality control and new processing techniques. They must have the ability to learn about new equipment and procedures on the job. Some of the knowledge and skills common to all

health technicians include safety procedures, instrumentation, medical terminology, records and administrative procedures, and medical ethics. The very basic academic skills of communications, mathematics, and science will be more critical than ever, as the most important skill we can give our students is the ability to solve problems and learn on the job. This V-TECS document identifies specific academic competencies so that academics and the health technician curriculum might be further integrated.

Methods

The Population

A review of the literature was conducted to identify specific health occupations that did not require licensure for employment. Through this research, the following occupations were defined as entry level, attainable with a high school education and on-the-job training (as opposed to formal postsecondary education):

Ambulance Attendant

Audiometrist
(hearing-test technician)

Cardiac Monitor Technician
(telemetry technician)

Cephalometric Analyst
(cephalometric technician)

Child care Attendant
(handicapped child)

Chiropractic Assistant

Dental Assistant

Dialysis Technician
(hemodialysis technician)

Electrocardiograph Technician
(ecg technician; ekg technician)

Electromyographic Technician
(emg technician)

Emergency Medical Technician

Mental Retardation Aide

Morgue Attendant

Nurse Assistant
(nurse aide)

Occupational Therapy Assistant

Optometric Assistant

Orderly

Orthotics Assistant

Pharmacy Technician
(Pharmacy clerk)

Polysomnographic Technician

Prosthetics Assistant

Pulmonary-Function Technician

Respiratory Therapy Aide

Stress Test Technician
(stress technician)

Holter Scanning Technician
(Holter technician)

Home Attendant

Medical Assistant

Surgical Technician
(operating-room technician)

Veterinary Technician

Given the above list of occupations, a general list of duties and tasks performed by each of the occupations was created. In the meantime, the Pennsylvania Department of Education formed a "Blue Ribbon Panel" of health professionals who met prior to Penn State receiving the grant. They also generated a list based on their experiences in each of their occupational areas. These two lists of duties and tasks were consolidated and condensed over the span of several Blue Ribbon Panel meetings. From these meetings, a concise definition of the multiskilled health technician was developed to help focus the duties and tasks which were under consideration. This definition follows:

> *An entry level "multiskilled health technician" (or assistant) has been educated and trained concurrently in clinical and classroom settings. Health technicians are responsible for performing entry level core health care competencies that require attention to technical detail. The duties and tasks related to these competencies are carried out on the basis of established "standards of practice." The "multiskilled health technician" always works under the direct supervision of the licensed health care professional.*

The Sample

The sample of the population chosen to survey was selected by the "snowball" technique. Because this is a new job occupation title, incumbent workers could not be located by the title, "multiskilled health technician." These incumbent workers also did not belong to any one professional organization, or work in one type of employment setting. These workers can be found in traditional settings such as hospitals and in untraditional

settings, such as privately operated home care agencies. Therefore, researchers asked the Blue Ribbon Panel to suggest names of contacts in various health settings who might be able to access one or more health technician-level workers. Surveys were also hand delivered to hospitals, pharmacies, clinics, doctors' offices, and nursing homes.

The Survey

A survey was developed from the consolidated duty and task list to validate the duties performed by incumbent workers on the job as well as the tools they use. See Appendix B for the survey. The survey results were then used to write appropriate curriculum in the V-TECS format.

Survey Results

Over 350 surveys were distributed. Determining the appropriate number of responses required was difficult. V-TECS suggested we match the ratio of our results to the ratio of incumbent workers in the state. State data divided health occupations into three broad categories: health professionals, health services assistants and attendants, and health paraprofessionals and technicians (Department of Labor and Industry, 1997). This research focused on the second and third categories. Health services assistants and attendants focus more on patient care. Health technicians focus more on the machines and equipment that assist in diagnostic testing and therapeutic treatments. Given the employment figures for Pennsylvania, the ratio of health services workers to health technicians in 1994 was 118,050 to 59,800 (66% to 34%). The 29 occupational groups surveyed in this research were divided into health services workers and health technicians. Our final survey results reflected the state profile, with more health services workers than technicians in our sample (55% to 45%).

A return rate of almost 20% (67 surveys) returned. The results of the survey can be found in Appendix C. The results confirm the basic premises of this research. Most multiskilled technicians work in a nontraditional setting, usually not hospitals. Most have

only high school diplomas, and most have worked in the health care field for less than ten years.

Top Skills Needed

From the results of the survey, a list of the top 18 skills needed by the multiskilled health technician was compiled. The following tasks were identified by at least 80% of the respondents as very important in their jobs:

Top 18 Skills Needed by the Multiskilled Health Technician

Work Ethic:
1. Work as a member of a health care team.
2. Complete work tasks within the legal and ethical guidelines of job description.
3. Perform health care duties in a professional manner.
4. Participate in inservices and workshops as part of lifelong learning.
5. Manage personal stress.
6. Practice proper body mechanics in the workplace.

Health-related Skills:
7. Perform aseptic handwashing techniques.
8. Perform infection control techniques to prevent transmission of infectious disease (i.e., hepatitis B, HIV/AIDS/TB).
9. Perform proper technique for handling clean and soiled linens and clothing.
10. Assist patients with ambulation.
11. Provide a clean, comfortable, safe environment.

Communication Skills:
12. Greet and direct patients and visitors.
13. Verify patient ID.
14. Provide supportive listening and respond to emotional needs of patients and families.
15. Recognize and respond to difficult patient's behavior modification.
16. Perform business office procedures.
17. Answer inquiries concerning patients from medical staff using correct medical terminology.
18. Carry out plan of care/orders.

Conclusions

This survey of incumbent workers in the health services and health technician occupations confirms that many workers can find entry-level employment with a high school diploma and learn the specifics of their work on-the-job. The core skills required by these workers include basic work ethics, communication skills, and some common health-related skills. These workers can be prepared in high school to move into a wide variety of

occupations and further their education while earning an income. This will ensure more job flexibility for our young people.

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